AMENDMENTS TO THE CLAIMS:

1. (currently amended) A method for collecting and separating whole blood into one or more components comprising:

providing a disposable blood separation fluid circuit adapted to cooperate with a reusable separation controller, the fluid circuit including a fluid flow path for communication with a blood source, a first container in fluid communication with the fluid flow path and a second container in fluid communication with the first container and the fluid flow path;

connecting the fluid flow path to a blood source;

flowing quantities of whole blood into said containers;

centrifugally processing at least a portion of said quantity of whole blood in the first container to separate it into the desired components for removal of at least a portion of one of said components from the first container;

disconnecting the source from the fluid circuit after flowing said quantities of whole blood into said containers; and

beginning to centrifugally process at least a portion of the other of said quantities of whole blood after disconnecting the source.

2. (canceled)

3. (previously presented) The method of claim 1 in which at least one of the containers includes a quantity of anticoagulant.

4. (previously presented) The method of claim 1 in which about 200-750 ml of whole blood are flowed into the containers.

5. (previously presented) The method of claim 1 in which about 500 ml of whole blood are flowed into the containers.

6. (previously presented) The method of claim 5 in which a unit of whole blood is flowed into the containers.

7. (previously presented) The method of claim 1 including connecting additional collection containers of whole blood to the fluid flow path for processing through the fluid circuit.

8-9. (canceled)

10. (original) The method of claim 1 in which the blood source is a human.

11-12. (canceled)

13. (original) The method of claim 1 including pooling together blood from other blood sources and flowing the pooled blood into the flow path for processing through the fluid circuit.

14-19. (canceled)

20. (currently amended) A method for collecting and separating whole blood into one or more components comprising:

providing a disposable blood separation fluid circuit adapted to cooperate with a reusable separation controller, the fluid circuit including a fluid flow path for communication with a blood source and a container in fluid communication with the fluid flow path;

connecting the fluid flow path to a blood source;

flowing quantities of whole blood from the source into the fluid circuit and the container;

centrifugally processing at least a portion of the quantity of whole blood in the container to separate it into the desired components for removal of at least a portion of one of said components from the container;

disconnecting the source from the fluid circuit after flowing said quantities of whole blood into the fluid circuit and the container; and

beginning to centrifugally process at least a portion of the quantity of whole blood in the fluid circuit after disconnecting the source.

21. (previously presented) The method of claim 20, wherein the blood from the source is collected in an initial collection container prior to processing in the container.

22. (previously presented) The method of claim 1, wherein one of said containers is a processing chamber.

23. (previously presented) The method of claim 1, wherein the fluid circuit includes a clamp associated with the fluid flow path between the blood source and the containers.

24. (previously presented) The method of claim 1, wherein said flowing quantities of whole blood into said containers includes sequentially flowing quantities of whole blood into said containers.

25. (previously presented) The method of claim 1, wherein said flowing quantities of whole blood into said containers includes simultaneously flowing quantities of whole blood into said containers.

26. (previously presented) The method of claim 1, wherein said flowing quantities of whole blood into said containers includes flowing whole blood from one of the containers into the other container.

27. (previously presented) The method of claim 20, wherein said container is a processing chamber.

28. (currently amended) A method for collecting and separating whole blood into one or more components comprising:

providing a disposable blood separation fluid circuit adapted to cooperate with a reusable separation controller, the fluid circuit including a fluid flow path for communication with a blood source, a container in fluid communication with the fluid flow path, and a blood processing chamber in fluid communication with the container and the fluid flow path;

connecting the fluid flow path to a blood source;

flowing a quantity of whole blood into the blood processing chamber;

flowing another quantity of whole blood into the container;

centrifugally processing at least a portion of said quantity of whole blood in the blood processing chamber to separate it into the desired components for removal of at least a portion of one of said components from the blood processing chamber;

disconnecting the source from the fluid circuit after flowing said another quantity of whole blood into the container; and

beginning to centrifugally process at least a portion of said another quantity of whole blood after disconnecting the source.

29. (previously presented) The method of claim 28, wherein said flowing a quantity of

whole blood into the blood processing chamber and said flowing another quantity of whole blood into the container are performed sequentially.

30. (previously presented) The method of claim 28, wherein said flowing a quantity of whole blood into the blood processing chamber and said flowing another quantity of whole blood into the container are performed simultaneously.

31. (previously presented) The method of claim 28, wherein said flowing a quantity of whole blood into the blood processing chamber includes flowing whole blood from the container into the blood processing chamber.